

WHAT IS CLAIMED IS:

1. A bonded structure comprising:  
a first substrate;  
a second substrate; and  
an adhesive composition bonding the first substrate and the second substrate to one another at an add-on level between about 0.5 and about 25 grams/meter<sup>2</sup>, wherein the adhesive composition comprises an amorphous poly-alpha-olefin and a tackifier, and the bonded structure has a dynamic peel strength between about 40 and about 1000 grams per 25 millimeters.
2. The bonded structure of Claim 1, wherein the adhesive composition comprises between about 50% and about 99% by weight amorphous poly-alpha-olefin.
3. The bonded structure of Claim 1, wherein the adhesive composition comprises between about 1% and about 50% by weight tackifier.
4. The bonded structure of Claim 1, wherein the adhesive composition consists essentially of the amorphous poly-alpha-olefin, the tackifier, and an antioxidant stabilizer.
5. The bonded structure of Claim 1, wherein the amorphous poly-alpha-olefin comprises propylene copolymerized with at least one of the group consisting of: butene, ethylene, and hexene.
6. The bonded structure of Claim 1, wherein the amorphous poly-alpha-olefin comprises a polypropylene-1-butene amorphous poly-alpha-olefin.
7. The bonded structure of Claim 1, wherein the tackifier has a molecular weight of about 2000 Daltons or less.

8. The bonded structure of Claim 1, wherein the tackifier comprises a C5 hydrocarbon tackifier.

9. The bonded structure of Claim 1, having a compression-tensile peel strength between about 80 and about 400 grams per square millimeter.

10. The bonded structure of Claim 1, wherein each of the first and second substrates is selected from the group consisting of: nonwoven material, woven material, film, foam, an elastic component, a fastening component, and combinations thereof.

11. The bonded structure of Claim 1, wherein at least one of the first and second substrates comprises at least one of the group consisting of cellulosic material, materials containing natural fibers, thermoplastic material, and combinations thereof.

12. The bonded structure of Claim 1, wherein at least one of the first and second substrates comprises at least one of the group consisting of a polyester layer, a polyethylene layer, a polypropylene layer, and combinations thereof.

13. The bonded structure of Claim 1, wherein at least one of the first and second substrates comprises at least one of the group consisting of a necked-bonded laminate, a stretch-bonded laminate, a spunbond-meltblown-spunbond laminate, a spunbond layer, a carded layer, a wet-laid layer, a meltblown layer, a hydroentangled layer and combinations thereof.

14. The bonded structure of Claim 1, wherein at least one of the first and second substrates comprises at least one of the group consisting of elastomeric polymer compositions, tackified polymers, olefinic copolymers, polyethylene elastomers, polypropylene elastomers, polyester elastomers, ethylene-propylene-diene terpolymers, styrene-isoprene-styrene, styrene-butadiene-styrene, styrene-ethylene/butylene-styrene, styrene-ethylene/propylene-styrene, polyurethane, polyisoprene, cross-linked polybutadiene, and combinations thereof.

15. The bonded structure of Claim 1, wherein at least one of the first and second substrates comprises a low-surface-energy olefin substrate.

16. The bonded structure of Claim 1, wherein at least one of the first and second substrates comprises a low-tension elastic material.

17. The bonded structure of Claim 1, wherein at least one of the first and second substrates comprises an elastomeric substrate.

18. The bonded structure of Claim 1, wherein at least one of the first and second substrates comprises an extensible substrate.

19. The bonded structure of Claim 1, wherein at least one of the first and second substrates comprises a non-extensible substrate.

20. The bonded structure of Claim 1, wherein at least one of the first and second substrates comprises a liquid-impermeable, water-vapor-transmissible substrate.

21. The bonded structure of Claim 1, wherein at least one of the first and second substrates has a thickness of about 40  $\mu\text{m}$  or less.

22. The bonded structure of Claim 1, wherein the first and second substrates are each part of a single substrate.

23. The bonded structure of Claim 1, having no burn-through visual defects greater than about 1 millimeter.

24. An article comprising:

a first substrate;

a second substrate; and

an adhesive composition bonding the first substrate and the second substrate to one another at an add-on level between about 0.5 and about 25 grams/meter<sup>2</sup> thereby forming a bonded structure, wherein the adhesive composition comprises an amorphous poly-alpha-olefin and a tackifier, and the bonded structure has an end seal strength between about 40 and about 1000 grams per 25 millimeters, and the article is selected from the group consisting of personal care products, health/medical products, and household/industrial products.

25. An article comprising:

a film;

a nonwoven web; and

an adhesive composition bonding the film and the nonwoven web to one another at an add-on level between about 2 and about 5 grams/meter<sup>2</sup> thereby forming a bonded structure, wherein the adhesive composition comprises a polypropylene-1-butene amorphous poly-alpha-olefin and a C5 hydrocarbon tackifier, and the bonded structure has an end seal strength between about 60 and about 600 grams per 25 millimeters, and the article is selected from the group consisting of personal care products, health/medical products, and household/industrial products.

26. A method of making a bonded structure, comprising the steps of:

forming an adhesive composition by combining an amorphous poly-alpha-olefin, and a tackifier;

providing a first substrate;

providing a second substrate;

applying the adhesive composition at a temperature of about 170 degrees Celsius or lower, to at least one of the first substrate and the second substrate; and

joining at least a portion of the first substrate to at least a portion of the second substrate with at least a portion of the applied adhesive composition positioned between the first substrate and the second substrate.

27. The method of Claim 26, wherein the adhesive composition has a Brookfield viscosity between about 1000 and about 15000 centipoise at 190 degrees Celsius.

28. The method of Claim 26, comprising applying the adhesive composition to the at least one of the first substrate and the second substrate at an add-on level between about 0.5 and about 25 grams per square meter

29. The method of Claim 26, comprising applying the adhesive composition to the at least one of the first substrate and the second substrate by melt-spraying the adhesive composition onto at least one of the first and second substrates.

30. The method of Claim 26, comprising applying the adhesive composition to the at least one of the first substrate and the second substrate by slot-coating the adhesive composition onto at least one of the first and second substrates.

31. The method of Claim 26, comprising applying the adhesive composition to the at least one of the first substrate and the second substrate in a swirl pattern.